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## Facsimile Cover Sheet

**To:** A. Ly, Examiner  
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**From:** David R. Burns  
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**Case No.:** FHW-037CPA

**Date:** 06/21/02

**Sent By:**

**Pages including this  
cover page:** 14

**Message:** Dear Examiner,

Enclosed please find our **PROPOSED AMENDMENT AND RESPONSE**  
for the above-referenced application (Serial No. 09/237,466).

Thank you for your attention to this matter.

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the application of: Derek Ian Joseph HOPKINS

Group Art Unit: 2172

Serial No.: 09/237,466

Examiner: Ly, A.

Filed: January 26, 1999

For: ANALYSING TACTICAL DATA LINK  
MESSAGES

Attorney Docket No.: FHW-037CPA

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Date of Signature and of Mail Deposit

By:

David R. Burns  
Reg. No. 46,590  
Attorney for Applicant

**PROPOSED AMENDMENT AND RESPONSE**

Dear Sir:

In response to the Office Action mailed April 2, 2002, please amend the above titled application as follows.

Serial No. 09/237,466Art Unit. 2172

In the Claims:

Please cancel claim 9 without prejudice.

Please amend claims 1 and 8.

1. (Amended) A method of analysing data link messages,

the data link messages being formatted digital data sequences transmitted between units, including a message type field and at least one message content field whose meaning is determined by the message type;

the method comprising the steps of:

- (a) receiving a plurality of data link messages and storing same in a database;
- (b) assigning each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type;
- (c) within a group,
  - (i) tabulating the messages so as to align corresponding fields;
  - (ii) displaying the tabulated data.
- (d) displaying a list of field contents for each field type, the list being filtered to remove repeated incidence of the same content.

8. (Amended) A method according to claim 1 in which the messages are tactical data link messages originating from a plurality of military platforms, the messages being in digital form, at least some of which being transmitted by the units via a wireless network.

**REMARKS**

The foregoing amendment amends claims 1 and 8 and cancels claim 9 without prejudice. Now in the application are claims 1-8 of which claim 1 is independent. No new matter has been added. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above in condition for allowance. Attached hereto, on a page entitled "**Version with Markings to Show Changes,**" is a marked-up version of the changes made to the claims by the current amendment.

The Applicant acknowledges with appreciation the telephonic interview granted by the Examiner.

**Description and Advantages of the claimed invention:**

Military equipment, such as ships, aircraft, and vehicles periodically transmit data indicative of their location, speed, armament, status, and the like. The data is sent via a wireless transmission and is referred to as a tactical data link (TDL) message. The received data is used by the appropriate field commanders to command, control and coordinate military personnel and equipment in battle situations. Although the TDL message types and formats are defined by a standard, there often exists interpretation differences amongst the various member nations of the North Atlantic Treaty Organization (NATO). Consequently, a conflict often arises when TDL messages are exchanged between military units of the member nations. An example of one

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possible conflict is the expectation of receiving data representing the speed of an aircraft, but instead receiving latitude data from the aircraft.

Given that each transmitting piece of military equipment transmits about 10 MB of data per hour during a military operation that can last one or more days, the volume of data an operator must sort through to identify and resolve data conflicts requires the use of databases to analyze the data. However, the conversion of the data into a form readable by the database, along with the generation of queries and analysis of the query results to detect data conflicts often takes several days to complete.

The claimed invention addresses the need of providing data analysis of received TDL messages in a timelier manner. Specifically, the present invention is able to assign a TDL message to a specific message group that contains TDL messages of a specific message type. Within each message group the claimed invention tabulates the messages so as to align corresponding data fields and displays the data in tabulated form. In this manner, unusual or spurious data entries are detected in a more timely manner that allow analysis results to be presented as part of a post operation debrief.

Advantageously, the claimed invention may be implemented using commercially available software, such as Microsoft<sup>®</sup> Excel<sup>®</sup> or another suitable spreadsheet application. Further, a list of field contents for each data field can be displayed and the list can be filtered to remove repeat instances of the same content. As such, the claimed invention advantageously

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allows an operator to detect a conflict by reviewing the content of a selected data field and determining if the list contains the proper data content for the respective data field.

**The claims distinguish from the applied art.**

The claimed subject matter differs from and is patentably distinct from the applied art. The Examiner rejects claims 1-7 as being obvious over U.S. Patent No. 5,923,846 of Gage, et al., in view of U.S. Patent No. 5,251,324 of McMullan, Jr. The Examiner further rejects claims 8 and 9 as being obvious over U.S. Patent No. 5,923,846 of Gage, et al., in view of U.S. Patent No. 5,251,324 of McMullan, Jr. and further in view of U.S. Patent No. 5,974,238 of Chase, Jr. Applicant respectfully submits that claims 1-8 are not obviated by the art of record for the reasons set forth below.

U.S. Patent No. 5,923,846 of Gage et al. (hereinafter "Gage"), describes an architecture for a bulletin board system (BBS). A BBS serves as an information and file passing center that allows users to upload and download files to and from a particular location on a computer network. The operation of uploading or downloading a file in the BBS is of the referred to as posting (i.e. as in posting a note on a bulletin board). In some instances the particular location on the computer network where the posting is posted is a publicly accessible location and in other instances the particular location on the computer network where the posting is posted is a private or member only accessible location. The BBS of Gage provides a mechanism for linking a file object in a bulletin board posting. Specifically, Gage teaches and discloses the use of bulletin

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board postings that contain an embedded object that retains a link to an associated data file. *See Column 6, lines 60-63.*

The bulletin board postings disclosed and taught by Gage include a header portion that includes a destination for the posting, the name of the person making the posting, the subject of the posting, and the date and time of the posting. *See Column 9, lines 45-51.* Gage fails to teach or disclose the receiving of a plurality of data link messages (such as TDL messages) and storing each data link message in a database. The data link messages recited in claim 1 are formatted digital data sequences that are typically transmitted between military units. Each data link message includes a message type field and at least one message content field whose meaning is determined by the message type. That is, different message types have completely different formats and contain different information. For example, a track type message contains content fields that relate to position (latitude and longitude), velocity, and vehicle type that is reporting the information. See page 6, lines 18-24 and page 7 lines 6-7 of the specification. In this manner it is known for each message type a data content type for each content field, for example, numeric data, textual data, or a combination of both. In contrast, the bulletin board postings of Gage include a subject matter field that is used by the creator of the posting to identify the subject matter of the file posted. The subject matter field of Gage is analogous to a reference line or "RE:" line in a letter or memo that identifies the subject matter of the body of the letter or posting. *See Figure 5 of Gage* Moreover, Gage fails to teach or disclose the receiving of a plurality of data link messages and storing same in a database. Accordingly, as the Examiner admitted in the Office Action, Gage fails to teach or disclose a data link message having a

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message type field and at least one message content field whose meaning is determined by the message type as recited in amended claim 1

U.S. Patent No. 5,251,324 of McMullan, Jr. (hereinafter "McMullan"), describes a method and apparatus for generating and collecting viewing statistics in a cable television system. In this manner, a system manager transmits a record time to a remote cable terminal to indicate a point in time when the terminal is to begin the recording of viewing statistics. The remote cable terminal stores the record times in memory and when the record time matches the current time, the remote cable terminal stores in memory the viewing statistics. Then in response to a polling signal from the system manager, the cable terminals transmit back to the system manager the recorded viewing statistics with a time code corresponding to the time at which the viewing statistics were recorded. In this manner, the system manager is able to compile the viewing statistics to determine what channel the cable terminal was tuned to at a specific point in time.

The McMullan reference discloses several filters to condition an RF signal. The filters taught and disclosed by McMullan do not relate to a program that accepts a certain type of data as input, transforms it in some manner, and then outputs the transformed data as the Applicant discloses. Moreover, McMullan fails to teach or suggest that the data link messages are formatted digital data sequences that include a message type field and at least one message content field whose meaning is determined by the message type as required by amended claim 1.



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As discussed above, Gage fails to teach or disclose required elements of the claimed invention. Moreover, the Examiner admits that Gage in combination with McMullan fails to teach or suggest a data link message having a message type field and at least one message content field whose meaning is determined by the message type as recited in amended claim 1. As such, McMullan fails to cure the deficiencies of Gage. Accordingly, Gage and McMullan either alone or in combination fail to teach or suggest all of the elements in amended claims 1-7.

With regard to the rejection of the dependant claim 2, the Applicant contends that dependant claim 2 is patentable over Gage. Claim 2 depends either directly or indirectly from amended independent claim 1, and hence includes the receiving of a plurality of data link messages and storing same in a database and the assigning of each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type. Accordingly, the Applicant contends that the rejection of claim 2 is improper, and requests allowance of this claim.

With regard to the rejection of the dependant claim 3, the Applicant contends that dependant claim 3 is patentable over Gage. Claim 3 depends either directly or indirectly from amended independent claim 1, and hence includes the receiving of a plurality of data link messages and storing same in a database and the assigning of each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type. Accordingly, the Applicant contends that the rejection of claim 3 is improper, and requests allowance of this claim.

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With regard to the rejection of dependant claim 4, the Applicant contends that dependant claim 4 is patentable over McMullan. Claim 4 depends either directly or indirectly from amended independent claim 1, and hence includes the receiving of a plurality of data link messages and storing same in a database and assigning of each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type. Accordingly, the Applicant contends that the rejection of claim 4 is improper, and requests allowance of this claim.

With regard to the rejection of dependant claim 5, the Applicant contends that dependant claim 5 is patentable over Gage. Claim 5 depends either directly or indirectly from amended independent claim 1, and hence includes the receiving of a plurality of data link messages and storing same in a database and the assigning of each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type. Accordingly, the Applicant contends that the rejection of claim 5 is improper, and requests allowance of this claim.

With regard to the rejection of dependant claim 6, the Applicant contends that dependant claim 6 is patentable over McMullan. Claim 6 depends either directly or indirectly from amended independent claim 1, and hence includes the receiving of a plurality of data link messages and storing same in a database and the assigning of each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type. Accordingly, the Applicant contends that the rejection of claim 6 is improper, and requests allowance of this claim.

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With regard to the rejection of dependant claim 7, the Applicant contends that dependant claim 7 is patentable over McMullan. Claim 7 depends either directly or indirectly from amended independent claim 1, and hence includes the receiving of a plurality of data link messages and storing same in a database and the assigning of each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type. Accordingly, the Applicant contends that the rejection of claim 7 is improper, and requests allowance of this claim.

Regarding the rejection of dependant claims 8 and 9, the Applicant contends that U.S. Patent No. 5,974,238 of Chase, Jr (hereinafter "Chase") fails to cure the deficiencies discussed above with regard to Gage and McMullan either alone or in combination. Furthermore, the rejection of claim 9 is moot for claim 9 is canceled without prejudice by this Response. The Applicant contends that dependent claim 8 is patentable over Gage in view of McMullan in further view of Chase.

Chase discloses an apparatus for performing dynamic synchronization between data stored in a handheld computer and a host computer, each having a copy of a common data set. Chase fails to teach or disclose that the data link messages are formatted digital data sequences that include a message type field and at least one message content field whose meaning is determined by the message type. Claim 8 depends either directly or indirectly from amended independent claim 1, and hence includes the receiving of a plurality of data link messages and storing same in a database and the assigning of each data link message to one of a plurality of

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message groups such that each group contains data link messages of a specific message type. Accordingly, the Applicant contends that the rejection of claim 8 is improper, and requests allowance of this claim.

In view of the foregoing distinctions, the prior art of records fails to teach or suggest Applicant's invention. Accordingly, Applicant deems claims 1-8 to recite patentable subject matter. As such, the Examiner's rejections so far as they are based on 35 USC 103 should be reconsidered and withdrawn.

#### CONCLUSION

Applicant contends that the claims patentably distinguish over the cited art. The art is devoid of facts that render the claimed invention obvious to one of ordinary skill in the art when considering the U.S. Patent of Gage, the U.S. Patent of McMullan and the U.S. Patent of Chase. Accordingly, reconsideration and allowance of claims 1-8 are in order and requested. If there are any remaining issues an opportunity for an interview is requested prior to issuance of another Office Action.

Respectfully submitted,

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**“VERSION WITH MARKINGS TO SHOW CHANGES”**

**In the Claims:**

Please cancel claim 9 without prejudice.

Please amend claims 1 and 8.

1. (Amended) A method of analysing data link messages,

the data link messages being formatted digital data sequences transmitted between units, including a message type field and at least one message content field whose meaning is determined by the message type;

the method comprising the steps of:

- (a) receiving a plurality of data link messages and storing same in a database;
- (b) assigning each data link message to one of a plurality of message groups such that each group contains data link messages of a specific message type;
- (c) within a group,
  - (iii) tabulating the messages so as to align corresponding fields;
  - (iv) displaying the tabulated data.
- (d) displaying a list of field contents for each field type, the list being filtered to remove repeated incidence of the same content.

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8. (Amended) A method according to claim 1 in which the messages are tactical data link messages originating from a plurality of military platforms, the messages being in digital form [and] , at least some of which being transmitted by the units via a wireless network.